Amendments to the Claims:

The following Listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A fused polycrystalline material comprising Al_2O_3 and Y_2O_3, wherein at least a portion of the Al_2O_3 present in the fused polycrystalline material is transitional Al_2O_3, and wherein at least a portion of the Al_2O_3 and Y_2O_3 present in the fused polycrystalline material are present as a complex $Al_2O_3 \cdot Y_2O_3$.

2. (Original) The fused polycrystalline material according to claim 1, wherein the complex $Al_2O_3 \cdot Y_2O_3$ exhibits a garnet crystal structure.

3. (Original) The fused polycrystalline material according to claim 1, wherein the complex $Al_2O_3 \cdot Y_2O_3$ exhibits a perovskite crystal structure.

4. (Original) The fused polycrystalline material according to claim 1, wherein the complex $Al_2O_3 \cdot Y_2O_3$ exhibits a microstructure comprising dendritic crystals.

5. (Original) The fused polycrystalline material according to claim 4, wherein the dendritic crystals have an average size of less than 2 micrometers.

6. (Original) The fused polycrystalline material according to claim 1 comprising at least 50 percent by weight of the Al_2O_3.

7. (Original) The fused polycrystalline material according to claim 6, wherein the complex $Al_2O_3 \cdot Y_2O_3$, exhibits a garnet crystal structure.

8. (Original) The fused polycrystalline material according to claim 6, wherein the complex $Al_2O_3 \cdot Y_2O_3$, exhibits a perovskite crystal structure.

9. (Original) The fused polycrystalline material according to claim 6, wherein the complex $Al_2O_3 \cdot Y_2O_3$ exhibits a microstructure comprising dendritic crystals.

10. (Original) The fused polycrystalline material according to claim 9, wherein the dendritic crystals have an average size of less than 2 micrometers.

11. (Currently Amended) A fused polycrystalline particle comprising Al_2O_3 and Y_2O_3, wherein at least a portion of the Al_2O_3 present in the fused polycrystalline material is transitional Al_2O_3, and wherein at least a portion of the Al_2O_3 and Y_2O_3 present in the fused polycrystalline material are present as a complex $Al_2O_3 \cdot Y_2O_3$.

12. (Original) The fused polycrystalline particle according to claim 11, wherein the complex $Al_2O_3 \cdot Y_2O_3$, exhibits a garnet crystal structure.

13. (Original) The fused polycrystalline particle according to claim 11, wherein the complex $Al_2O_3 \cdot Y_2O_3$, exhibits a perovskite crystal structure.

14. (Original) The fused polycrystalline particle according to claim 1, wherein the complex $Al_2O_3 \cdot Y_2O_3$ exhibits a microstructure comprising dendritic crystals.

15. (Original) A plurality of fused polycrystalline particles according to claim 11.

16. (Original) The plurality of fused polycrystalline particles according to claim 15 comprising at least 50 percent by weight of the Al_2O_3, based on the total weight of the respective particle.

17. (Original) A plurality of particles having a specified nominal grade, wherein at least a portion of the plurality of particles are particles according to claim 16.

18. (Original) The plurality of particles having a specified nominal grade according to claim 17, wherein the complex $Al_2O_3 \cdot Y_2O_3$, exhibits a garnet crystal structure.

19. (Original) The plurality of particles having a specified nominal grade according to claim 17, wherein the complex $Al_2O_3 \cdot Y_2O_3$, exhibits a perovskite crystal structure.

20. (Original) The plurality of particles having a specified nominal grade according to claim 17, wherein the complex $Al_2O_3 \cdot Y_2O_3$, exhibits a microstructure comprising dendritic crystals.

21. (Original) The plurality of particles having a specified nominal grade according to claim 20, wherein the dendritic crystals have an average size of less than 2 micrometers.

22. (Original) The plurality of particles having a specified nominal grade according to claim 17, wherein the specified nominal grade is at least one of an ANSI, FEPA, or JIS standard.

23. (Original) The plurality of fused polycrystalline particles according to claim 16 comprising at least 75 percent by weight Al_2O_3, based on the total weight of the respective fused polycrystalline particle.

24. (Original) The plurality of fused polycrystalline particles according to claim 16 comprising at least 85 percent by weight Al_2O_3, based on the total weight of the respective fused polycrystalline particle.

25. (Original) The plurality of fused polycrystalline particles according to claim 16 comprising, by weight, the Al_2O_3 in a range from 40 to 90 percent by weight and the Y_2O_3 in a range from 60 to 10 percent by weight, based on the total weight of the respective fused polycrystalline particle.

26-27. (Cancelled)

28. (Currently Amended) A method of making fused polycrystalline material [[comprising (a) alpha alumina having an average crystallite size in a range from 1 to 10 micrometers, and (b) complex Y_2O_3·metal oxide present as a distinct crystalline phase]], the method comprising:

heating a first fused polycrystalline material, the first fused polycrystalline material comprising Al_2O_3 and Y_2O_3, wherein at least a portion of the Al_2O_3 is transitional Al_2O_3, and wherein at least a portion of the Al_2O_3 and Y_2O_3 are present as a complex Al_2O_3·Y_2O_3 to convert at least a portion of the first fused polycrystalline material to alpha alumina to provide a second fused polycrystalline material, the second fused polycrystalline material comprising (a) alpha alumina having an average crystallite size in a range from 1 to 10 micrometers, and (b) complex Y_2O_3·metal oxide present as a distinct crystalline phase.

29-48. (Cancelled)

49. (Currently Amended; Withdrawn) A method of making fused polycrystalline abrasive particles [[comprising (a) alpha alumina having an average crystallite size in a range from 1 to 10 micrometers, and (b) complex Y_2O_3·metal oxide present as a distinct crystalline phase]], the method comprising:

heating a plurality of first fused polycrystalline particles, the first fused polycrystalline particles comprising Al_2O_3 and Y_2O_3, wherein at least a portion of the Al_2O_3 is transitional Al_2O_3, and wherein at least a portion of the Al_2O_3 and Y_2O_3 are present as a complex Al_2O_3·Y_2O_3 to convert at least a portion of the first fused polycrystalline particles to alpha alumina to provide a second fused polycrystalline abrasive particles, the second fused polycrystalline abrasive particles comprising (a) alpha alumina having an average crystallite size in a range from 1 to 10 micrometers, and (b) complex Y_2O_3·metal oxide present as a distinct crystalline phase.

50. (Withdrawn) The method according to claim 49, wherein the fused polycrystalline abrasive particles comprise at least 75 percent by weight Al_2O_3, based on the total weight of the respective fused polycrystalline abrasive particle.

51. (Withdrawn) The method according to claim 49, wherein the fused polycrystalline, abrasive particles comprise at least 85 percent by weight Al_2O_3, based on the total weight of the respective fused polycrystalline abrasive particle.

52. (Withdrawn) The method according to claim 49, wherein the fused polycrystalline abrasive particles comprise, by weight, the Al_2O_3 in a range from 40 to 90 percent by weight and the Y_2O_3 in a range from 60 to 10 percent by weight, based on the total weight of the respective fused polycrystalline abrasive particle.

53. (Currently Amended; Withdrawn) A method of making fused polycrystalline abrasive particles [[comprising (a) alpha alumina having an average crystallite size in a range from 1 to 10 micrometers, and (b) complex Y_2O_3·metal oxide present as a distinct crystalline phase]], the method comprising:

providing a melt comprising Al_2O_3 and Y_2O_3;

shaping the melt into precursor particles;

cooling the precursor particles to directly provide first fused polycrystalline particles, the first fused polycrystalline particles comprising Al_2O_3 and Y_2O_3, wherein at least a portion of the Al_2O_3 is transitional Al_2O_3, and wherein at least a portion of the Al_2O_3 and Y_2O_3 are present as a complex Al_2O_3·Y_2O_3; and

heating the first fused polycrystalline particles comprising Al_2O_3 and Y_2O_3 to convert at least a portion of the first fused polycrystalline particles to alpha alumina to provide second fused polycrystalline abrasive particles, the second fused polycrystalline abrasive particles comprising (a) alpha alumina having an average crystallite size in a range from 1 to 10 micrometers, and (b) complex Y_2O_3·metal oxide present as a distinct crystalline phase.

54. (Withdrawn) The method according to claim 53 further comprising grading the fused polycrystalline abrasive particles to provide a specified nominal grade including the fused polycrystalline abrasive particles.

55. (Currently Amended; Withdrawn) A method of making fused polycrystalline abrasive particles [[comprising (a) alpha alumina having an average crystallite size in a range from 1 to 10 micrometers, and (b) complex Y_2O_3·metal oxide present as a distinct crystalline phase]], the method comprising:

providing a melt comprising Al_2O_3 and Y_2O_3;

cooling the melt to provide first fused polycrystalline material, the first polycrystalline material comprising Al_2O_3 and Y_2O_3, wherein at least a portion of the Al_2O_3 is transitional Al_2O_3, and wherein at least a portion of the Al_2O_3 and Y_2O_3 are present as a complex Al_2O_3·Y_2O_3;

crushing the first fused polycrystalline material comprising Al_2O_3 and Y_2O_3 to provide first fused polycrystalline particles comprising Al_2O_3 and Y_2O_3; and

heating the first fused polycrystalline particles to convert at least a portion of the first fused polycrystalline particles to alpha alumina to provide second fused polycrystalline abrasive particles, the second fused polycrystalline abrasive particles comprising (a) alpha alumina having an average crystallite size in a range from 1 to 10 micrometers, and (b) complex Y_2O_3·metal oxide present as a distinct crystalline phase.

56. (Withdrawn) The method according to claim 57 further comprising grading the fused polycrystalline abrasive particles to provide a specified nominal grade including the fused polycrystalline abrasive particles.

57. (Withdrawn) The method according to claim 57 further comprising grading the fused polycrystalline particles comprising Al_2O_3 and Y_2O_3 prior to heating to provide a specified nominal.

58. (Cancelled)